The relationship between schizotypal personality and internet addiction

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ABSTRACT

The current study assessed the relationship between problematic internet behaviors, as measured by the Internet Addiction Test (IAT), and schizotypal personality traits, measured by the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE(B)). One hundred participants (aged between 20 and 30) were given a battery of psychometric assessments, including the IAT and O-LIFE(B), as well as measures of depression, and anxiety. Around 30% of the sample displayed responses to the IAT that suggested some problems controlling internet behaviors, and there was no gender difference in these figures. There were associations between both the impulsive nonconformity and introverted anhedonia schizotypal personality traits and problematic internet use, over and above those associated with depression and anxiety. This replicates some previous work that implies that impulsiveness and depression are predictive of behavioral addictions, but places them within a single construct. The findings also support the notion of two groups of users who display problematic internet behaviors – impulsive and depressed individuals.

1. **INTRODUCTION**

Internet penetration into households varies dramatically from country to country, but, in some regions, such as Europe, North America, and some parts of Asia, it is now estimated that upwards of 70% of all households have access to the internet (ITU, 2014). Exact figures are difficult to ascertain in a rapidly changing digital landscape, but the highest percentages of internet use are for the 16-24 and 25-34 year old age groups (ONS, 2013). Internet usage is also associated with higher income and education levels (Lenhart, Purcell, Smith, & Zickuhr, 2010; ONS, 2013), and is particularly high among college students (see O'Brien, Li, Snyder, & Howard, 2016; Morahan-Martin & Schumacher, 2000; Niemz, Griffiths, & Banyard, 2005). This usage has been suggested to have profound implications for both individual and societal functioning (e.g., Burnay, Billieux, Blairy, & Larøi, 2015; Harris, & Sanborn, 2013; Young, 2011). Notwithstanding potential benefits accruing from the internet, evidence regarding the existence of behavioral and psychological problems connected with excessive use of the internet has accumulated (Byun, Ruffini, Mills, Douglas, Niang, Stepchenkova, & Blanton, 2009; Christakis, 2010; Osborne,Romano, Re, Roaro, Truzoli, & Reed, 2016; Reed, Vile, Osborne, Romano, & Truzoli, 2015), and such problems have been termed 'Internet Addiction Disorder' (IAD; Block, 2008; Young, 1998). Individuals who display IAD have been shown to spend increasing amounts of time on the internet, akin to developing tolerance to its effects (Griffiths, 2000), and to experience negative psychological consequences when they cannot access the internet, akin to withdrawal effects (Osborne et al., 2016; Romano, Osborne, Truzoli, & Reed, 2013). Additionally, individuals with IAD report significant and widespread disruptions to their social and

economic activities (Bozoglan, Demirer, & Sahin, 2013; Lin, Tsai, Chen, Koo, 2013; Shaw & Black, 2008; Weinstein, Dorani, Elhadif, Bukovza, Yarmulnik, & Dannon, 2015).

The increasing importance and use of the internet, coupled with the emergence of an awareness of problematic internet usage, has prompted concern across many countries (Dong, Huang, & Du, 2011; Niemz et al., 2005). In fact, the population prevalence of severe forms of IAD has been suggested to range from 10% in studies conducted in Europe to 20% in studies conducted in Asia (cf. Christakis, 2010; Kaur & Sharma, 2015; Park, Kim, & Cho, 2008; Villella, Martinotti, Nicola, Cassano, Torre, Gliubizzi, Messeri, Petruccelli, Bria, Janiri, & Conte, 2010). Additionally, a number of studies have noted that this issue is particularly problematic in university and college students (Anderson, 2001; Ellis, McAleer, & Szakas, 2015; Morahan-Martin & Schumacher, 2000; Niemz et al., 2005).

The perceived importance of IAD has produced a search for personality characteristics that may be associated with problematic internet usage (e.g., Armstrong, Phillips, & Saling, 2000; Burnay et al., 2015; Correa, Hinsley, & De Zuniga, 2010; Ko, Yen, Chen, Yeh, & Yen, 2009). In particular, traits such as impulsiveness and a lack of inhibition have been found to be associated with IAD (Dong, DeVito, Du, & Cui, 2012; Dong, Lu, Zhou, & Zhao, 2010; Reed, Osborne, Romano, & Truzoli, 2015; Zhang, Mei, Li, Chai, Li, & Du, 2015); as are related traits, such as openness to experience (Correa et al., 2010). Individuals who score highly on tests of internet addiction also show cognitive and neurological impairments associated with executive dysfunction, which can

encompass inhibitory control mechanisms (see Dong, Lin, & Potenza, 2015; Ko, Hsiao, Liu, Yen, Yang, & Yen, 2010; Zhou, Lin, Du, Qin, Zhao, Xu, & Lei, 2011).

In terms of its potential psychological co-morbidities, excessive and problematic internet usage is associated with high levels of depression (Gundogar, Bakim, Ozer, & Karamustafalioglu, 2012; Morrison, & Gore, 2010; Ostovar, Allahyar, Aminpoor, Moafian, Nor, & Griffiths, 2016), and social isolation (Byuan et al., 2009; Caplan, 2006; Weinstein, & Lejoyeux, 2010; Weinstein et al., 2015), as well as a variety of anxiety-related problems (Du, Jiang, & Vance, 2010; Lin et al., 2013; Ostovar et al., 2016). In some extreme cases, IAD is also associated with psychoticism (Cao, & Su, 2007; Mittal, Tessner, & Walker, 2007; Tzang, Chang, & Chang, 2015), and delusional or hallucinatory states (Griffiths, & Wood, 2000; Rizzo, Della Villa, & Crisi, 2015; Romano et al., 2013).

Although these psychological traits and co-morbidities associated with IAD show variance across individuals who exhibit problematic internet usage (Burney et al., 2015; Bernardi, & Pallanti, 2009), taken together, the types of psychological problems outlined above share some commonalities with a cluster of traits associated with schizotypy. The concept of schizotypy was proposed by Meehl (1962), who argued that all individuals hold schizotypal personality characteristics, which are associated with, but are less serious than, the symptoms of schizophrenia (Bentall, Claridge, & Slade, 1989; Claridge, 1990; Claridge & Beech, 1995). For example, a widely-used measure of schizotypy is the O-LIFE(B) schizotypy questionnaire (Mason, Linney, & Claridge, 2005), which proposes that there are four traits connected to a schizotypal personality: unusual experiences, cognitive disorganization, introverted anhedonia, and impulsive

nonconformity. Certainly, it has been shown that individuals scoring highly on psychometrically-measured scales of schizotypy display a number of characteristic differences in their cognitive abilities relative to those who score lower on schizotypy scales (e.g., Garety, Kuipers, Fowler, Freeman, & Bebbington, 2001; Tsakanikos & Reed 2005).

In terms of a potential relationship between problematic internet usage and schizotypal personality, the above brief review of the psychological characteristics associated with IAD, and the traits associated with schizotypy, point to some striking resemblances. For example, the impulsiveness displayed by those with IAD (Dong et al., 2012; Dong et al., 2010; Reed et al., 2015; Romano et al., 2013; Zhang et al., 2015) is part of the impulsive nonconformity concept used in schizotypy (Chapman, Chapman, Numbers, Edell, Carpenter, & Beckfield, 1984). Similarly, executive dysfunction problems associated with IAD (e.g., Ko et al., 2010; Zhou et al., 2011) have also been implicated in cognitive disorganization for high scoring schizotypal individuals (Suhr & Spitznagel, 2001). Depression is commonly found in those with high levels of problematic internet use, especially that resulting from social isolation (Gundogar et al., 2012; Caplan et al., 2006; Ostovar et al., 2016; Weinstein, & Lejoyeux, 2010; Weinstein et al., 2016), and this appears to map onto the introverted anhedonia aspects of schizotypy (see Cella, Cooper, Dymond, & Reed, 2008). Finally, the psychoticism and false perceptions that are sometimes seen in those with IAD (e.g., Cao & Su, 2007; Rizzo et al., 2015; Tzang et al., 2015), both strongly contribute to the unusual experiences sub-scale of the O-LIFE measure of schizotypy (Mason et al., 2005; Romano et al., 2013).

Given the increasingly recognized importance of IAD (Dong et al., 2011; Niemz et al., 2005), and of understanding the relationship between IAD and particular psychological characteristics (see Burnay et al., 2015; Correa et al., 2012; Ko et al., 2009), exploring the association between schizotypal personality and problematic internet usage may be fruitful in terms of providing further information on this growing area of concern.

Although there have been explorations of the relationship between internet problems and various psychiatric co-morbidities, such as psychoticism (Cao & Su, 2007; Mittal et al., 2007; Rizzo et al., 2015; Tzang ey al., 2015), and also with cognitive functioning issues, like executive function (Dong et al., 2012; 2016; Zhou et al., 2011), the relationship between IAD and the cluster of traits connected to schizotypal personality in a non-clinical sample with a high rate of internet usage (i.e. younger college students) has received scant attention. As this group is at particular risk of contacting the problems associated with internet (Morahan-Martin, & Schumacher, 2000; O'Brien et al., 2016), the current study focused its attention on such a sample, and explored the suggestion that many of the sub-scales of the O-LIFE(B) might show a positive relationship to measures of problematic internet usage.

2. **Method**

2.1 **Participants**

One hundred participants (53 males and 47 females) were recruited from a University campus in the United Kingdom, after responding to advertisements placed around campus. An online recruitment strategy was not employed, as it is suggested that

this method may bias potential relationships in studies of internet use (see Osborne, Middleton, Jones, Ford, & Noble, 2013; Widyanto & McMurran, 2004). All participants were volunteers, and none received any form of compensation for their participation.

The sample had a mean age of 24.34 (± 2.55, range = 20 – 30) years old. All participants were college students: 31 science and engineering, 38 social science, and 31 arts and languages. The self-reported ethnicity of the participants, according to the classifications recommended by the UK Office National Statistics, were: 61 White; 4 Mixed / Multiple Ethnic Groups; 24 Asian / Asian British; 9 Black / African / Caribbean / Black British; and 1 Other Ethnic Group. The marital status of sample was: 60 single, 13 married or in a civil partnership; 21 in other forms of relationship; and 6 divorced or widowed.

Participants were asked about their use of the internet in two questions. One asked them to choose one of three alternatives regarding the average numbers of hour per day spent on the internet over the last few months: 53 reported spending between 1 to 3 hours on the day online; 38 reported spending 4 to 7 hours per day on line; and 9 reported spending over 7 hours a day. The other question asked about the types of uses that they made of the internet, and participants were asked to indicated if they often visited particular types of site, and were allowed multiple responses across the following classes: 99 information finding; 92 social network sites; 78 shopping; 69 TV/film; 57 dating; 51 gambling; 48 news sites; 42 content sharing sites; 38 gaming; 11 blogging; 8 chat rooms; 6 sexual content.

2.2 **Materials**

2.2.1 *Internet Addiction*

Internet Addiction Test (IAT; Young, 1998) is a 20-item scale covering the degree to which use of internet disrupts everyday life (work, sleep, relationships, etc.). Each item is scored on a 1-4 scale, and the overall score ranges from 20 to 100. The factor structure of the IAT is currently debated (cf. Chang & Man Law, 2008; Widyanto & McMurran, 2004), but Young (1998) has suggested that employing a cut-off score of 40 or more for the total score of the IAT represents some level of problematic internet usage (see also Hardie & Tee, 2005; Romano et al., 2013; Widyanto & McMurran, 2004). The internal reliability (Cronbach, α) of the scale has been found to be between .90 (Widyanto & McMurran 92004) and .93 (Young, 1998).

2.2.2 *Schizotypy*

The Oxford Liverpool Inventory of Feelings and Experiences - Brief Version (OLIFE-B; Mason et al., 2005) is a 43-item scale consisting of four subscales: unusual experiences (UE), cognitive disorganization (CD), introverted anhedonia (IA) and impulsive nonconformity (IN). The scale has an internal reliability (Cronbach α) of between .62 and .8, and a concurrent validity of between .90 and .94 (UE α = .80, validity = .94; CD, α = .77, validity = .93; IA, α = .62, validity = .91; IN, α = .63, validity = 0.9; Mason et al, 2005). There are no cut offs, but based on the original data it is possible to classify people as displaying the trait to a large extent if they are one standard deviation above the mean (UE = 6; CD = 7; IA = 4; IN = 4).

2.2.3 *Depression*

Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item questionnaire that assesses the clinical symptoms of depression through asking about feelings over the past week. The score is a sum of the positive answers, ranging from 0 to 63, and it is suggested that scores of 10 or greater reflect the presence of some level of depression. The internal reliability (Cronbach α) of the scale is between .73 and .92, and a concurrent validity of between .55 and .73 for non-psychiatric subjects (Beck, Steer, & Garbin, 1988).

2.2.4 *Anxiety*

The Spielberger Trait Anxiety Inventory (STAI-T; Spielberger, 1983) rates the affective, cognitive, and physiological manifestations of anxiety in terms of long-standing patterns (i.e., trait anxiety). Scores for each question range from 1 = never, to 4 = almost always, and the total score can range from 20 to 80. A score of greater than 40 is recommended as showing some signs of anxiety. The internal reliability (Cronbach α) of the scale is .93, and a concurrent validity = .52 to .80.

2.3 **Procedure**

The participants were seated alone in a quiet room and were tested individually. After a brief introduction to the study, in which they were told that the study concerned personality and behavior, the participants were asked to complete the above battery of psychological tests. The tests were given to the participants in a random order, with the exception that the Internet Addiction Test was always presented last, followed by the two questions about internet usage.

3. **Results**

Table 1 about here

Table1 shows the mean scores for the depression (BDI), and anxiety (STAI), measures, as well as these scores for the four sub-scales of the O-LIFE(B); it also shows the correlations between these scores. The means and correlations for this sample for all the scales are very similar to those previously seen for these scales with nonclinical samples, as are the inter-correlations between these variables (Tsakanikos & Reed, 2005).

The sample mean score for the Internet Addiction Test was 32.38 ($\pm$ 14.56; range = 5 – 63); with 31 scoring above the IAT cut-off of 40 for problematic usage, and 69 scoring below the cut off. Males had a mean IAT score of 32.42 (+ 13.41; range = 5 – 57), with 17 (32%) showing signs of IAD, and 36 (68%) with no IAT. Females has a mean IAT score of 32.34 ($\pm$ 15.89; range = 5 – 63), with 14 (30%) showing IAD, and 33 (70%) displaying no signs of IAD. There were no statistically significant differences between the IAT scores of males and females, $t(98) = .025$, $p > .95$, $d = .006$. In fact, there were no gender differences on any variable, ts < 1, with the possible exception of cognitive disorganization, where males (4.72 $\pm$ 2.61) had greater levels of disorganization than females (3.68 $\pm$ 2.80), but this was not a statistically reliable difference, $t(98) = 1.96$, $p = .058$, $d = .42$.

Table 1 also shows the correlations between the IAT score and the other measures for the sample as a whole, and shows moderately-sized statistically significant

relationships between the IAT score and all the other variables except for depression (BDI), which was not reliably associated with IAT, and cognitive disorganization, which had only a weak relationship with IAT (and below the level required for statistical significance if a Bonferroni correction is applied).

Table 2 about here

Table 2 shows the numbers of participants scoring above the cut-off for moderate or worse problematic internet behavior (i.e., 40), classified by those who scored one standard deviation above the mean O-LIFE(B) scores (reported by Mason et al., 2005) for unusual experiences, cognitive disorganization, introverted anhedonia, and impulsive nonconformity. The table also shows the chi-square values conducted on these data, and the strength of association (phi coefficient) between the sets of variables. Inspection of these data suggest that there were statistically significant and moderately-sized associations (based on the criterion of a correlation of .000-0.299 being weak, .300-.699 being moderate, and over .700 being strong; Cohen, 1988), between IAT and unusual experiences, introverted anhedonia, and impulsive nonconformity, but there was no association between IAT and cognitive disorganization.

Table 3 about here

To examine the degree to which the variables were associated with the presence of some level of problematic internet behavior (i.e. an IAT score of 40 or more), a

stepwise logistic regression was performed. As the focus of the study was on the relationship between schizotypal personality traits and IAT, the anxiety (STAI) and depression (BDI) scores were entered on step 1, and the four sub-scales of the O-LIFE(B) were entered on step 2. The second step of the regression was statistically significant, with a -2LL value of 68.28, $p < 0.001$. The top panel of Table 3 shows the odds ratio results for the four sub-scales of the O-LIFE, which reveal that introverted anhedonia and impulsive nonconformity independently accounted for the IAT score, with no statistically reliable association between either unusual experiences or cognitive disorganization and IAT.

As there is no universally agreed cut-off point for defining IAD, it was also thought prudent also to perform a stepwise multiple regression on these data, using the IAT score as the dependent variable. As for the above logistic regression, anxiety (STAI) and depression (BDI) were entered on step 1, and the four sub-scales of the O-LIFE(B) were entered on step 2. The second step of the regression was significant, with an adjusted $R^2 = .273$, $p < .001$. The bottom panel of Table 3 shows the beta values for the four sub-scales of the O-LIFE obtained in the second step of the regression, which reveals that introverted anhedonia and impulsive nonconformity were statistically significantly related to IAT, but that, as with the logistic regression above, unusual experiences and introverted anhedonia did not independently predict the IAT score.

4. **Discussion**

The current study investigated potential associations between the personality trait of schizotypy (Mason et al., 2005) and problematic internet usage. Potential associations

between aspects of this trait and internet addiction have been suggested by a number of previous findings (Cao & Su, 2007; Dong et al., 2012Griffiths, & Wood, 2000; Mittal et al., 2007; Zhou et al., 2011), but have not been studied in a nonclinical sample.

The sample of 100 university students was chosen, as this reflected a group at some risk of problematic internet behaviors (Anderson, 2001; Morahan-Martin & Schumacher, 2000). The sample displayed quite typical patterns of internet usage; for example, they had an average usage of about 4 hours per day, which has also been reported elsewhere as typical (Hardie & Tee, 2007; Widyanto & McMurran, 2004), and the major types of internet use for the current sample were connected with social-media, and this has also been reported for this group (Casale, Tella, & Fioravanti, 2013). Thus, while the sample was not large by some comparisons, certainly not compared to those samples collected from on-line surveys (e.g., Correa et al., 2010), it did display patterns of use commonly found, and avoids the problems of on-line recruitment in biasing the sample (see Widyanto & McMurran, 2004).

Approximately 30% of the current sample displayed signs of problematic internet usage, using the criteria suggested by Young (1998; see also Hardie & Tee, 2005; Widyanto & McMurran, 2004). This figure does not necessarily reflect the presence of IAD, itself, but rather reflects some level of disruption to functioning as a result of internet-related activities. This figure is higher than some estimates of prevalence in Europe (e.g., Christakis, 2010; Villella et al., 2010) that have adopted stricter criteria for the classification of IAD, but it is in line with other recent studies that have used the same criteria (e.g., Guertler, Rumpf, Bischof, Kastirke, Petersen, John, Meyer, 2014), and is also similar to estimates from Asian countries (see Park et al, 2008). For the current

sample, there was no difference between the prevalence of problematic internet usage among males and females. It has previously been suggested that males will display higher levels of IAD (Johansson, & Götestam, 2004), but this difference may reflect the relatively younger age, and university-recruited nature, of the sample employed in this study, as well as the rapidly changing nature of internet usage.

The major focus of this study was to determine if schizotypal personality traits were associated with problematic internet usage. When studied in isolation from one another, being classed as high-scorer in terms of either introverted anhedonia or impulsive non-conformity was associated with being classed as high scoring on the IAT. Similarly, scoring high on unusual experiences was also associated with having a higher IAT score (see also Romano et al., 2013). However, when included together, only introverted anhedonia and impulsive nonconformity were found to predict IAT scores, and whether an individual was classified as having a problem with internet usage (over and above the contribution of the more commonly studied depression and anxiety). Thus, impulsiveness and anhedonic schizotypal personality traits appeared the most useful predictors of problematic internet usage.

This pattern of data corresponds to a number of other reports that have noted a relationship between IAT and impulsiveness (Dong et al., 2010; 2012; Ko et al., 2010; Zhou et al., 2011), and between IAT scores and depression (Gundogar et al., 2012; Morrison, & Gore, 2010). The current study did not find particularly strong relationships between depression, itself, and problematic internet use. However, the studies which have noted a link between IAD and depression have employed a wider age range of individuals from a variety of backgrounds (e.g., Morrison, & Gore, 2010), which may

well explain the difference. In terms of the other schizotypal variables, a few studies have shown a relationship between IAD and psychoses and hallucinations and IAD (Cao, & Su, 2007; Griffiths & Wood, 2000; Romano et al., 2013), but these are not as numerous as for the above two schizotypal variables of impulsive nonconformity and introverted anhedonia.

Thus, the current results show, within the construct of schizotypal personality dimensions, that there are two distinct predictors of internet usage – impulsivity and depression – and the question remains as to whether these two predict different types of internet usage. It may be that individuals with high levels of schizotypal impulsive nonconformity, and openness to experience (Correa et al., 2010), are reinforced by the immediacy of the feedback associated with the internet. Impulsive nonconformity (Rybakowski, & Klonowska, 2011) has been found to be associated with a susceptibility to immediate reinforcement and an inability to inhibit behaviors – factors which have both previously been associated with internet addiction. Those with introverted anhedonia may be reinforced by the perceived ability to make social contacts on the internet without threat produced by real social situations (Hardie & Tee, 2007). Thus, the current results may point to there being multiple groups of individuals with problematic internet behaviors, which are motivated by different factors, and which may result in different patterns of internet usage.

That there were relationships between some of the schizotypy scales and problematic internet usage prompts the question of whether these traits are predictive of heavy internet use, or whether they are the result of excessive use. Of course, these suggestions are not mutually exclusive. Schizotypal traits, especially impulsiveness,

have previously been found to predict engagement in activities associated with other behavioral addictions, such as gambling (e.g., Dussault, Brendgen, Vitaro, Wanner, & Tremblay, 2011), which implies that these traits may be predictive of usage. However, prolonged exposure to an environment in which outcomes for activities are immediate and almost completely controllable by the individual, may well lead to the development of impulsive behaviors. Certainly, studies from learning paradigms have noted similar effects (Mazur, 2012).

There are a number of limitations to the current study that should be noted and addressed in future research. The sample was specifically one obtained from a university campus, and it is unclear if these findings would generalize to a wider population. The study was also cross-sectional in nature, and a longitudinal study would allow the temporal relationship between these variables to be better established – it is currently unclear if those with schizotypal tendencies seek out the internet, or whether internet exposure produces these tendencies, or both.

5. **Conclusions**

The current study has noted that there are quite high levels of problematic internet use in 20 to 30 year old participants, and that some schizotypal personality traits, especially impulsive nonconformity and introverted anhedonia, are associated with this problematic behavior. This finding mirrors previous studies that have shown key associations between such personality dimensions and IAD, but places these findings into the context of a unified personality construct. Although it is unclear whether these schizotypal traits predict, or are a consequence of, excessive internet usage, this

relationship suggests that some caution regarding the internet be employed, and questions whether the continued unregulated advertising of internet products is socially responsible in the same way as alcohol and nicotine advertisements have been controlled.

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Table 1: Means (standard deviations) for depression (BDI), anxiety (STAI), unusual experiences (UE), cognitive disorganization (CD), introverted anhedonia (IA), and impulsive nonconformity (IN), and the Pearson correlations between these measures and with the internet addiction test (IAT).

Scale	Mean	(SD)	STAI	UE	CD	IA	IN	IAT
BDI	7.52	(6.24)	.445***	.692***	.395***	.543***	.543***	.162
STAI	42.75	(9.03)		.479***	.422***	.315**	.308**	.439***
UE	3.54	(2.95)			.507***	.442***	.313***	.324**
CD	4.23	(2.73)				.221*	.328**	.255*
IA	2.37	(1.54)					.232*	.328***
IN	3.17	(2.05)						.353***

* = $p < .05$; ** = $p < .01$; *** = $p < .001$

Table 2: Percentages scoring higher than cut off points for unusual experiences (UE > 5), cognitive disorganization (CD > 6), introverted anhedonia (IA > 3), and impulsive nonconformity (IN > 3), who also scored above the cut off for internet problems (IAD > 39), and the chi-square and Phi-correlations.

		No IAD	IAD	Chi-square	Phi
UE	No	58	15	13.81	.372***
	Yes	11	16		
CD	No	55	19	3.77	.194
	Yes	14	12		
IA	No	62	20	9.31	.305**
	Yes	7	11		
IN	No	57	11	21.83	.467***
	Yes	12	20		

* = $p < .05$; ** = $p < .01$; *** = $p < .001$

Table 3: Exponential(B) values for variables in a logistic regression (top panel) and multiple regression (bottom panel) predicting problematic internet behavior (IAT > 39): UE = unusual experiences; CD = cognitive disorganization; IA = introverted anhedonia; IN = impulsive nonconformity; BDI = depression; STAI = anxiety.

Scale	Odds ratio	p
UE	1.266	.115
CD	.961	.761
IA	1.796	.032
IN	1.936	.001

Scale	Beta	p
UE	.970	.135
CD	.090	.872
IA	2.419	.015
IN	1.360	.044